

US 20090128503A1

(19) United States

(12) **Patent Application Publication** Grant et al.

(54) METHOD AND APPARATUS FOR PROVIDING A FIXED RELIEF TOUCH SCREEN WITH LOCATING FEATURES USING DEFORMABLE HAPTIC SURFACES

(75) Inventors: **Danny A. Grant**, Laval (CA); **Juan M. Cruz-Hernandez**, Montreal (CA)

Correspondence Address:
James M. Wu
JW Law Group

84 W. Santa Clara Street, Suite 820 San Jose, CA 95113 (US)

(73) Assignee: **Immersion Corp.**, San Jose, CA

(US)

(21) Appl. No.: 11/943,862

(22) Filed: Nov. 21, 2007

100~



(43) **Pub. Date:** May 21, 2009

Publication Classification

(51) **Int. Cl.** *G06F 3/041* (2006.01)

(52) U.S. Cl. 345/173

(57) ABSTRACT

A method and apparatus for an electronic interface device capable of providing a fixed relief touch screen with locating features using deformable haptic surfaces are disclosed. The device, in one embodiment, includes a haptic mechanism and a touch-sensitive surface. The haptic mechanism provides haptic feedback in response to an activating command. The touch-sensitive surface is capable of changing its surface texture from a first surface characteristic to a second surface characteristic in response to the haptic feedback. For example, the first surface characteristic may be coarse texture while the second surface characteristic may be smooth texture.



